

# A few scanning tips

by Wayne Fulton

## Photography

A few attempts to clarify some mysteries about the basics of flash and digital photography, hopefully helpful. More detail about fundamentals, how it works for those interested (and is good to know when you're ready).

### Essential Fundamentals About Digital Images

[A Starting Point for Beginning to Learn Photography](#)

[Pixels, Printing dpi, Video dpi - What's With That?](#) First Basic Fundamentals

[Image Resize - Cropping, Resampling, Scaling](#) Basics to use digital photos

[White Balance Correction](#) Click WB Tool on a White thing

[Why Should I Shoot Raw?](#) It's the easy way to get quality

[Field of View](#) of Lens and sensor, with calculator

[Depth of Field and Hyperfocal](#) with calculator, and a better way to blur the background

[Crop Factor](#) and Equivalent Focal Length, and the **WHY** of the Magnification illusion

[f/stops and shutter speeds](#) Understanding the numbers, and a few lens properties

[File Types, Bit Depth, Image size, Memory size](#) Details

[What are JPG losses?](#) JPG Artifacts

[RGB color](#) What is Digital Color?

## Exposure Metering

[How Light Meters Work](#) - Maybe not as assumed

[Details about Metering Principles](#) - Including TTL flash

[A Histogram is Not a Light Meter](#) - Incident vs. Reflected meters

[EV - Exposure Value and EV Chart](#)

[Sunny 16 Rule of daylight exposure](#)

[18% Gray Card](#) - What's the Idea?

[Kodak's Accurate Exposure with your Meter](#) A classic

[Do I need a handheld light meter?](#) Sekonic L308S

## Scanning Basics

This scanning material is about **the basics of scanning photos and documents**. The purpose here is to offer some scanning tips about using your scanner, and to explain the basics for scanning photos and documents. It is also about the fundamentals of digital images, about the basics to help you get the most from your images from your scanner or camera. **How it works, for those who want to know.**

Included here are the general questions that we've all asked about digital images. The material is about the basics of scanning, certainly not superficial, but it is not at all difficult either, it is just simply about how it works. It describes in plain language the things we need to know to efficiently get the most from our images, in the various ways that we can use them.

Do realize that a digital camera is a scanner too, and its photos are already digitized (already scanned, so to speak), meaning, that the first preference, instead of scanning photo prints, is to use your original camera file if you still have it.

DPI resolution is one of the first concerns. Many newbies want to scan a photo at the greatest possible resolution. We'll explain why that's the very wrong answer, with tips about how to choose a more appropriate answer to match the actual job. That and many other scanning basics are covered here, and it's intended help newcomers to graphics and scanning of photos and documents. There will be a little technique to learn, but when you've seen it once, then it's rather simple.

[Never used a scanner before?](#)

[Evaluating Scanner Features](#)

[Quick Summary of Digital Basics](#)

[Surprises in the Use of Histograms](#) Use only the camera's three RGB histograms, NOT the single channel Gray histogram

[Histograms are Gamma Encoded](#) The numbers may not be what you think

[What and Why is Gamma?](#) with calculator for the histogram values

## Flash Fundamentals We Must Know

[Introduction](#) - Basics about light and flash

[Inverse Square Law](#) - Flash falls off with distance

[Guide Numbers](#) and calculator, for Manual flash exposure, even a [HSS GN calculator](#) too

[Bounce Flash, and TTL Flash Compensation](#)

[Camera Distance Does Not Affect Exposure](#)

[Continuous light vs. Flash - Shutter Speed](#)

[Other Differences, Continuous vs Flash](#)

[Maximum Sync Speed](#) The shutter limits it, Not the flash

[HSS - High Speed Sync, What is it?](#)

[What is Soft Light?](#)

[Flash pictures are Double Exposures](#) - Learn to use it

[Flash Outdoors](#) - Fill Flash in Sunlight

[Flash Indoors](#) - Factors affecting TTL exposure

[What Hot Shoe Flashes Do](#)

[Auto ISO](#) - but for flash?

[Rear Curtain Sync](#) - for Blur from Ambient Motion Trails

[Matching White Balance of Room Lights](#) - Colored Filters on Flash

## Speedlights

[A Beginners Guide to Select a Hot Shoe Flash, Part 2, chart](#)

[Guide Number calculator](#), even a [HSS GN calculator](#) too

[Comparing Power of Flashes with Guide Number](#)

[Review of Yongnuo YN-565EX Speedlight](#)

[Review of Aperlite YH-700N Speedlight](#)

[Review of Neewer NW-985N Speedlight](#)

[Review of Neewer VK750 II Speedlight](#)

[Nikon TTL BL with D-Lens Distance](#) - Lens distance accuracy is poor

[Scanning / Printing dpi Calculator](#)

## Scanning 101 The Basics

[START \\* Fundamental Concepts](#)

[Video Resolution](#) - How much to scan?

[Say No to 72 dpi](#) - It's a false notion

[File types, Bits, Image size, Memory size](#)

[Images for television](#) or [PowerPoint](#)

[Printing Resolution](#) - Scaling and Resampling

[The Scaling Menu](#) - Scaling Output Size

[Finding the Scaling and Resampling Menus](#)

[Printing Guidelines](#) - Printing dpi

[Printer Resolution](#) - How much to scan?

[Line art and Threshold](#) - Copy, OCR, Text

[Line art and Grayscale](#)

[Scanning for Fax](#)

[Descreen to remove Moiré Interference](#)  
Images in printed media

[Interpolated Resolution](#)

[Photo Resolution](#) - How much can we scan?

[Image File Formats](#) - Which format?

[Transparent Media Adapter](#) - 35 mm slides?

[What about Film Scanners?](#)

[Dynamic Range](#) - 12 or 16 bits?

[A few Links to Other scanning sites](#)

[A few Frequently Asked Questions - FAQ](#)

## Scanning 201

[A Simple Way to Get Better Scans](#)

[Histogram](#)

[UnSharp Mask sharpening](#)

[Third Party Flash Brands Bypass the D-Lens Distance Problems](#)  
[Speedlight AA Batteries](#)  
[Comparisons of Optical Slave Triggers](#)  
[Speed of Flash Units for High Speed Photography](#)  
[Nikon TTL history - TTL, D-TTL, iTTL](#)

## Lighting

[The Main skill is to Learn to Actually "See" the Lighting](#)  
[A Standard Portrait Lighting Setup](#)  
[What is Soft Light?](#)  
[What Umbrellas Do](#)  
[Mounting Speedlights in Umbrellas](#)  
[Methods to Trigger Flashes](#)  
[Nikon CLS Commander Wireless Remote Flash System \(AWL\)](#)  
[Lighting Kits for Home Setups](#) - Flash is good for Portraits  
[Comparing Properties of Speedlights vs Studio Lights](#)  
[Which is Softer, Reflected or Shoot-through Umbrellas?](#)

## Miscellaneous

[Scanning Thousands of old Slides with a digital camera](#)  
[Copying slides with a camera](#) - calculator for macro lens or extension tube math  
[Curve Tool compared with Levels](#)  
[Have we hit a megapixel limit?](#)  
[Diffraction Limited Pixels?](#) Really?  
[Memory Card Speed](#) How much do we need?  
[Camera Exif Data](#) Need a good Exif viewer?  
[Good Books on Flash Photography](#)  
[Math tips of EV and precise camera numbers](#) - f/stop, shutter, ISO  
[Solenoid Valve for Water Drop photography](#)

[Clone Tool](#)

[Restoration of Genealogical Photos](#)

[Correction of Faded Slides](#)

A few Typical  
(models discontinued now)  
Scanner Software

[Acer Mirascan](#)

[HP PrecisionScan LT](#)

[HP PrecisionScan](#)

[HP PrecisionScan Pro](#)

[Microtek ScanWizard 5](#)

[Microtek ScanWizard Pro 6](#)

[Minolta Scan Dual II](#)

[Polaroid 4000](#)

[Umax VistaScan](#)

[Umax MagicScan](#)

[VueScan](#) - still going strong!

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These are all CALCULATORS, with a few Extra features

[Compare 2 camera Exposures](#), Difference and Equivalents

[Compare 2 shutter speeds, f/stops, or ISO values](#)

[Compare Inverse Square Law for 2 distances](#)

[Compare 2 Guide Numbers for relative Flash Power](#)

[DPI calculator](#), Scanning and Printing Resolution

[EV and EV Chart](#)

[Field of View](#) and [Chart](#) and [Math](#)

[Depth of Field and Hyperfocal](#), A better way to blur the background

[Flash Guide Number](#), for Manual flash exposure

[HSS Guide Number](#)

[Four Crop Factor calculators](#)

[Exact Aspect Ratio](#)

[Determine Distance or Size of an object in image](#)

[Histogram Gamma](#)

[Maximum image dimensions from Megapixels](#)

[Copying slides with a camera](#), macro lens or extension tubes

[Convert Bytes](#), B, KB, MB, GB, TB

[There are 4 Sizes of any digital image](#)

[Diffraction](#) In support of Depth of Field

[Improved "500 Rule - Stars and Star Trails](#)

[Guide Number of ganged flashes. Exposure of metered Main & Fill](#)

[Percentage of Fill Flash of TTL Flash Compensation](#) with Lighting Ratio

[Charts of Precise Goal and Nominal values](#) of f/stop, shutter and ISO settings

[Chart of "The Numbers" for many sensors & film sizes](#) - More about Depth of Field

[Motion blur or camera shake in pixels](#)

## Stock Market

[50 year S&P 500 performance](#), concerned withdrawal depletion

[Wondering about other stock choices with better earnings? Performance Comparison of 120+ stock and fund tickers](#)

[Methods of Stock Market Gains, Compounding, and Annualized Return](#) and 6 calculators

[S&P 500 Daily Action and counts of Record Highs in last 5 years](#)

The next three are not calculators, just basic need to know stuff

[Dividends are simply a withdrawal](#) which reduces your investment's price, value and future gains. But **Reinvesting Dividends** puts the value back, and becomes **free additional new shares, seriously increasing long term gain.**

[Basic info about market, investing, and S&P 500](#)

[A few important things to know about investing in Bonds](#)

I do try to help with questions about the basics or about my material, but I cannot help with the "what hardware to buy" or "my hardware doesn't work" questions, so those two types of email probably get no response. In particular, I really would appreciate hearing about anything that is "wrong", especially about any problems with the site.

**Email: [w@scantips.com](mailto:w@scantips.com)**

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